

Postgraduate Certificate Video Game Programming





Postgraduate Certificate Video Game Programming

- » Modality: online
- » Duration: 6 weeks
- » Certificate: TECH Global University
- » Accreditation: 6 ECTS
- » Schedule: at your own pace
- » Exams: online

Website: www.techtitude.com/us/information-technology/postgraduate-certificate/video-game-programming

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01 Introduction

For anyone dreaming of becoming a video game designer, it is crucial to delve into the study of the main programming tools, as this will provide the necessary skills to navigate confidently and adeptly in this sector. In this program from TECH, students will find the most relevant information in this field, allowing them to specialize in a rapidly growing industry in a short period of time.





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Discover the key tools for video game programming and tackle this task with the confidence of having the necessary training”

The video game industry is constantly growing, becoming one of the most important sectors today. As a result, more and more individuals are drawn to this field, wishing to specialize in creating the future video games that will be distributed worldwide. Advances in new technologies have fostered the creation and design of video games, as the emergence of new tools and applications has made programming these products much easier. However, it is crucial to have qualified professionals who possess the knowledge to handle these tools, as well as the creativity and taste necessary to design successful games that meet the needs of consumers.

To this end, TECH Global University offers this comprehensive Postgraduate Certificate in Video Game Programming, a program where students will find the most relevant aspects of this field, including programming in Unity 3D, Terrain, character creation in 2D, HUD and interface creation, among other key elements to succeed in this sector.

This unique program is delivered in a 100% online format, allowing students to manage their own study time and seamlessly balance it with their professional and personal commitments. In this way, TECH trusts its students and their organizational abilities, providing them with the opportunity to self-manage their studies and achieve success in the field.

This **Postgraduate Certificate in Video Game Programming** contains the most complete and up-to-date program on the market. The most important features include:

- ♦ The development of practical cases presented by experts in video game design
- ♦ The graphic, schematic, and practical contents with which they are created, provide scientific and practical information on the disciplines that are essential for professional practice
- ♦ Practical exercises where self-assessment can be used to improve learning
- ♦ Its special emphasis on innovative methodologies in video game design
- ♦ Theoretical lessons, questions to the expert, debate forums on controversial topics, and individual reflection assignments
- ♦ Content that is accessible from any fixed or portable device with an internet connection

“*The video game industry is constantly growing, which is why more and more people are choosing to specialize in this field*”

“*TECH offers all its academic resources to help you acquire the skills needed to be successful in this industry”*

In this Postgraduate Certificate, you will find numerous practical cases that will be extremely useful for reinforcing your knowledge in this field.

This is a 100% online program, allowing you to continue your studies from anywhere in the world.

Its teaching staff includes professionals from the field of engineering, who contribute their work experience to this program, as well as renowned specialists from leading companies and prestigious universities.

The multimedia content, developed with the latest educational technology, will provide the professional with situated and contextual learning, i.e., a simulated environment that will provide an immersive learning experience designed to prepare for real-life situations.

This program is designed around Problem-Based Learning, whereby the professional must try to solve the different professional practice situations that arise during the course. For this, the professional will have the support of an innovative interactive video system created by renowned experts.



02 Objectives

The Postgraduate Certificate in Video Game Programming is designed to help professionals acquire and understand the latest developments in this field, enabling them to perform their work with the highest quality and professionalism. It is important to note that this is a field that continues to grow in importance and has expanded exponentially in recent years. Therefore, advanced training in this area will bring numerous benefits to professionals.



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Achieve your academic and professional goals with this specialization program offered by TECH”



General Objectives

- ◆ Understand the different video game genres, the concept of gameplay, and their characteristics to apply them in video game analysis or game design creation
- ◆ Dive into the video game production process and the SCRUM methodology for project production
- ◆ Learn the fundamentals of video game design and the theoretical knowledge that a video game designer should possess
- ◆ Generate ideas and create entertaining stories, plots and scripts for video games
- ◆ Understand the theoretical and practical foundations of video game artistic design
- ◆ Be capable of creating an independent digital entertainment startup





Specific Objectives

- ♦ Master the most widely used game development engine: Unity 3D Engine
- ♦ Study Unity programming with C# and learn the program's interface
- ♦ Learn about creating a 2D video game: programming character movements, enemies, and animations
- ♦ Develop different game elements such as platforms or keys
- ♦ Create the game interface or HUD
- ♦ Expand knowledge in AI, both for creating enemies and non-playable characters (NPCs) in 2D

“Understand the specifics of video game programming and achieve success in your profession”

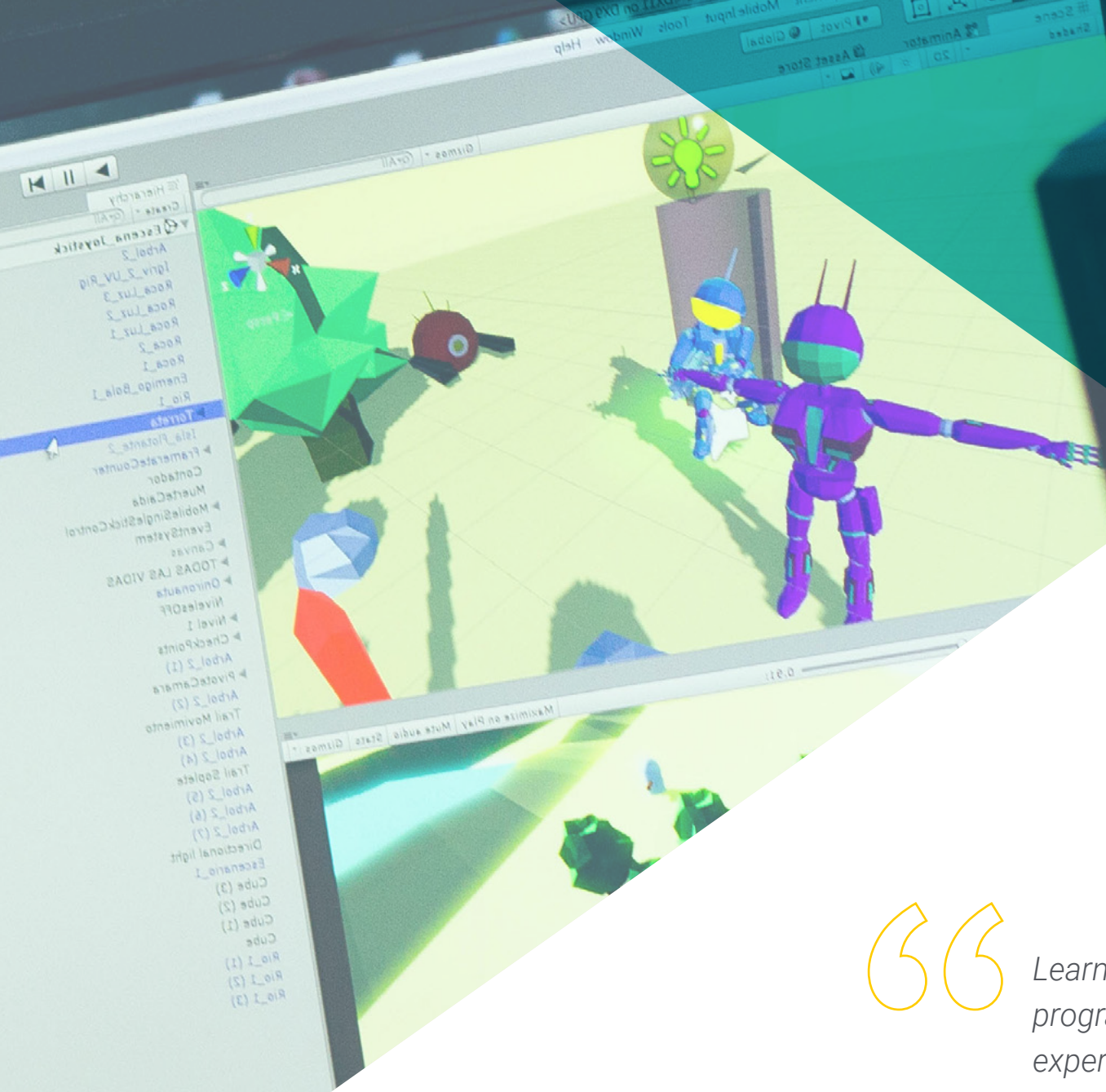


03

Course Management

TECH Global University is home to professionals specialized in every area of knowledge, who bring their real-world experience to our programs. A multidisciplinary and highly respected team has come together to offer you their expertise in this highly relevant field. Our professors prioritize innovation and specialized study to ensure success in a rapidly growing industry. Recognizing the educational needs in this field, they have designed a high-level program to prepare you for the future.





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Learn the keys to video game programming from leading experts in the field”

Management



Ms. Vaquero, Gisela

- ♦ Founder and CEO of Jellyworld Interactive, Video Game and Serious Games Company
- ♦ Founder of Women in Games España (WIGES), the first Spanish organization of women in video games. 2017
- ♦ Degree in Audiovisual Communication in the University of Barcelona. 2008
- ♦ Degree in Advertising and Public Relations from the University of Girona. 2005
- ♦ Master's Degree in Video Game Design and Programming at the Polytechnic University of Catalonia. 2012
- ♦ Training in Screenwriting at the Barcelona Film School (ECIB)
- ♦ Collaborating professor in the Master's Degree of Design and Development of video games at the Open University of Cataluña (UOC). Present
- ♦ She has developed video games for different distribution platforms such as computers, cell phones and Virtual Reality
- ♦ She has released the games 'Trainpunk Run' (2018) and Woman's Quiz (2019)

Faculty

Mr. Carpintero Rodríguez, Eduardo

- ♦ Video Game Developer and Interactive Environments Specialist
- ♦ Master's Degree in Video Game Development. IVisual. 2016
- ♦ Higher Degree in Web Application Development. IES Ribera de Castilla. 2017
- ♦ Higher Degree in Multiplatform Application Development. IES Ribera de Castilla. 2015
- ♦ Course in Mobile Game Development. Camilo José Cela University. 2014



04

Structure and Content

The content of the Postgraduate Certificate is structured to cover all the areas of knowledge that professionals need to deeply understand, including the latest and most interesting updates in the sector. This high-quality study will allow students to compete confidently and effectively in the creation and design of video games. Without a doubt, it is a program with a high-level curriculum that provides the advanced training required by professionals.



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*A high-level academic program with
the most up-to-date information on
video game programming”*

Module 1. Programming

- 1.1. Programming in Unity 3D
 - 1.1.1. Installation
 - 1.1.2. Interface Elements
 - 1.1.3. Create Scene and Import Object
- 1.2. Terrain
 - 1.2.1. Terrain I: Creating Ground and Mountains
 - 1.2.2. Terrain II: Trees and Flowers
 - 1.2.3. Terrain III: Water and Skybox
- 1.3. Creating 2D Characters
 - 1.3.1. Collisions
 - 1.3.2. Collisions
 - 1.3.3. Trigger
- 1.4. Gameplay I
 - 1.4.1. Programming: Attack Skill
 - 1.4.2. Programming: Jump Skill
 - 1.4.3. Programming: Shooting Skill
- 1.5. Gameplay II
 - 1.5.1. Programming: Weapons
 - 1.5.2. Programming: Items
 - 1.5.3. Programación: Checkpoint
- 1.6. AI: Enemies
 - 1.6.1. Basic Enemy
 - 1.6.2. Flying Enemy
 - 1.6.3. Complex Enemy
- 1.7. Programming Elements: Items and Platforms
 - 1.7.1. Moving Platform
 - 1.7.2. Bombs
- 1.8. 2D Character Animation and Particles
 - 1.8.1. Importing Animations
 - 1.8.2. Program Animations
 - 1.8.3. Particles
- 1.9. HUD and Interface Creation
 - 1.9.1. Create Health Bar
 - 1.9.2. Create Interface
- 1.10. Text and Dialogues
 - 1.10.1. Create Text
 - 1.10.2. Create Dialogues
 - 1.10.3. Response Selection



A unique educational experience to enhance your knowledge in this field"



05 Study Methodology

TECH is the world's first university to combine the **case study** methodology with **Relearning**, a 100% online learning system based on guided repetition.

This disruptive pedagogical strategy has been conceived to offer professionals the opportunity to update their knowledge and develop their skills in an intensive and rigorous way. A learning model that places students at the center of the educational process giving them the leading role, adapting to their needs and leaving aside more conventional methodologies.



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TECH will prepare you to face new challenges in uncertain environments and achieve success in your career”

The student: the priority of all TECH programs

In TECH's study methodology, the student is the main protagonist.

The teaching tools of each program have been selected taking into account the demands of time, availability and academic rigor that, today, not only students demand but also the most competitive positions in the market.

With TECH's asynchronous educational model, it is students who choose the time they dedicate to study, how they decide to establish their routines, and all this from the comfort of the electronic device of their choice. The student will not have to participate in live classes, which in many cases they will not be able to attend. The learning activities will be done when it is convenient for them. They can always decide when and from where they want to study.

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*At TECH you will NOT have live classes
(which you might not be able to attend)”*



The most comprehensive study plans at the international level

TECH is distinguished by offering the most complete academic itineraries on the university scene. This comprehensiveness is achieved through the creation of syllabi that not only cover the essential knowledge, but also the most recent innovations in each area.

By being constantly up to date, these programs allow students to keep up with market changes and acquire the skills most valued by employers. In this way, those who complete their studies at TECH receive a comprehensive education that provides them with a notable competitive advantage to further their careers.

And what's more, they will be able to do so from any device, pc, tablet or smartphone.

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TECH's model is asynchronous, so it allows you to study with your pc, tablet or your smartphone wherever you want, whenever you want and for as long as you want”

Case Studies and Case Method

The case method has been the learning system most used by the world's best business schools. Developed in 1912 so that law students would not only learn the law based on theoretical content, its function was also to present them with real complex situations. In this way, they could make informed decisions and value judgments about how to resolve them. In 1924, Harvard adopted it as a standard teaching method.

With this teaching model, it is students themselves who build their professional competence through strategies such as Learning by Doing or Design Thinking, used by other renowned institutions such as Yale or Stanford.

This action-oriented method will be applied throughout the entire academic itinerary that the student undertakes with TECH. Students will be confronted with multiple real-life situations and will have to integrate knowledge, research, discuss and defend their ideas and decisions. All this with the premise of answering the question of how they would act when facing specific events of complexity in their daily work.



Relearning Methodology

At TECH, case studies are enhanced with the best 100% online teaching method: Relearning.

This method breaks with traditional teaching techniques to put the student at the center of the equation, providing the best content in different formats. In this way, it manages to review and reiterate the key concepts of each subject and learn to apply them in a real context.

In the same line, and according to multiple scientific researches, reiteration is the best way to learn. For this reason, TECH offers between 8 and 16 repetitions of each key concept within the same lesson, presented in a different way, with the objective of ensuring that the knowledge is completely consolidated during the study process.

Relearning will allow you to learn with less effort and better performance, involving you more in your specialization, developing a critical mindset, defending arguments, and contrasting opinions: a direct equation to success.



A 100% online Virtual Campus with the best teaching resources

In order to apply its methodology effectively, TECH focuses on providing graduates with teaching materials in different formats: texts, interactive videos, illustrations and knowledge maps, among others. All of them are designed by qualified teachers who focus their work on combining real cases with the resolution of complex situations through simulation, the study of contexts applied to each professional career and learning based on repetition, through audios, presentations, animations, images, etc.

The latest scientific evidence in the field of Neuroscience points to the importance of taking into account the place and context where the content is accessed before starting a new learning process. Being able to adjust these variables in a personalized way helps people to remember and store knowledge in the hippocampus to retain it in the long term. This is a model called Neurocognitive context-dependent e-learning that is consciously applied in this university qualification.

In order to facilitate tutor-student contact as much as possible, you will have a wide range of communication possibilities, both in real time and delayed (internal messaging, telephone answering service, email contact with the technical secretary, chat and videoconferences).

Likewise, this very complete Virtual Campus will allow TECH students to organize their study schedules according to their personal availability or work obligations. In this way, they will have global control of the academic content and teaching tools, based on their fast-paced professional update.



The online study mode of this program will allow you to organize your time and learning pace, adapting it to your schedule”

The effectiveness of the method is justified by four fundamental achievements:

1. Students who follow this method not only achieve the assimilation of concepts, but also a development of their mental capacity, through exercises that assess real situations and the application of knowledge.
2. Learning is solidly translated into practical skills that allow the student to better integrate into the real world.
3. Ideas and concepts are understood more efficiently, given that the example situations are based on real-life.
4. Students like to feel that the effort they put into their studies is worthwhile. This then translates into a greater interest in learning and more time dedicated to working on the course.

The university methodology top-rated by its students

The results of this innovative teaching model can be seen in the overall satisfaction levels of TECH graduates.

The students' assessment of the teaching quality, the quality of the materials, the structure of the program and its objectives is excellent. Not surprisingly, the institution became the top-rated university by its students according to the global score index, obtaining a 4.9 out of 5.

Access the study contents from any device with an Internet connection (computer, tablet, smartphone) thanks to the fact that TECH is at the forefront of technology and teaching.

You will be able to learn with the advantages that come with having access to simulated learning environments and the learning by observation approach, that is, Learning from an expert.



As such, the best educational materials, thoroughly prepared, will be available in this program:



Study Material

All teaching material is produced by the specialists who teach the course, specifically for the course, so that the teaching content is highly specific and precise.

This content is then adapted in an audiovisual format that will create our way of working online, with the latest techniques that allow us to offer you high quality in all of the material that we provide you with.



Practicing Skills and Abilities

You will carry out activities to develop specific competencies and skills in each thematic field. Exercises and activities to acquire and develop the skills and abilities that a specialist needs to develop within the framework of the globalization we live in.



Interactive Summaries

We present the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

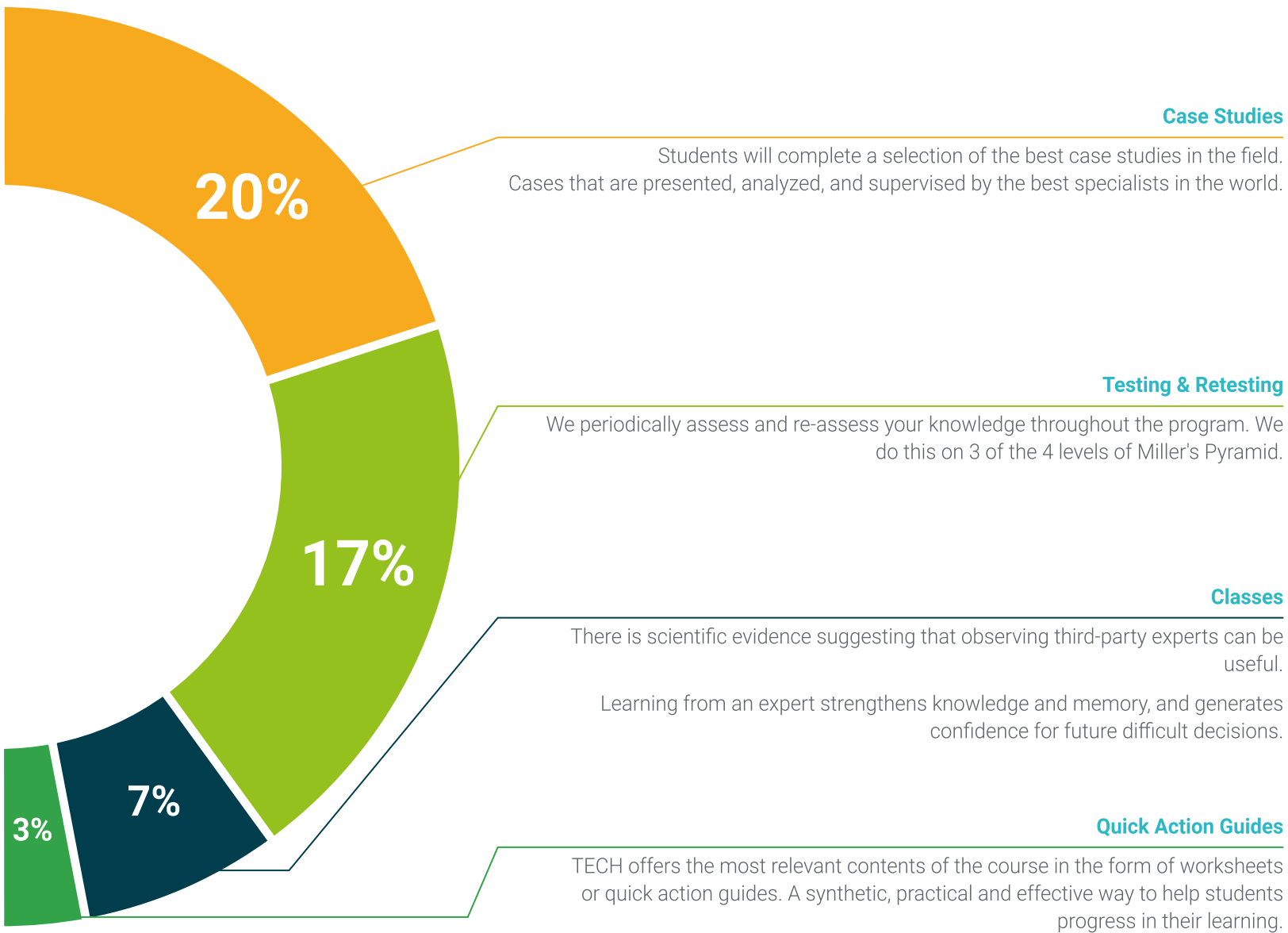
This exclusive educational system for presenting multimedia content was awarded by Microsoft as a "European Success Story".



Additional Reading

Recent articles, consensus documents, international guides... In our virtual library you will have access to everything you need to complete your education.





06 Certificate

The Postgraduate Certificate in Video Game Programming guarantees students, in addition to the most rigorous and up-to-date education, access to a diploma for the Postgraduate Certificate by TECH Global University.



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Successfully complete this program and receive your university qualification without having to travel or fill out laborious paperwork”

This private qualification will allow you to obtain a diploma for the **Postgraduate Certificate in Video Game Programming** endorsed by TECH Global University, the world's largest online university.

TECH Global University, is an official European University publicly recognized by the Government of Andorra ([official bulletin](#)). Andorra is part of the European Higher Education Area (EHEA) since 2003. The EHEA is an initiative promoted by the European Union that aims to organize the international training framework and harmonize the higher education systems of the member countries of this space. The project promotes common values, the implementation of collaborative tools and strengthening its quality assurance mechanisms to enhance collaboration and mobility among students, researchers and academics.

This **TECH Global University** private qualification, is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

Title: **Postgraduate Certificate in Video Game Programming**

Modality: **online**

Duration: **6 weeks**

Accreditation: **6 ECTS**





Postgraduate Certificate Video Game Programming

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